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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,269	09/26/2001	Stephen A. Morgan	NTR-100US	8378

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EXAMINER	
WALLING, MEAGAN S	
ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/963,269	MORGAN, STEPHEN A.	
	Examiner	Art Unit	
	Meagan S Walling	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-10,12-26,28-44 and 46-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2-10,12-20,29-44 and 46-53* is/are allowed.

6)☒ Claim(s) *21 and 24-26* is/are rejected.

7)☒ Claim(s) *22,23 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 21 and 26 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. (US 6,513,970) in view of Lemelson (US 5,181,521).

With respect to claims 21 and 26, Tabata et al. teaches an infrared sensor (Fig. 1, Ref. 20); a display coupled to the infrared sensor to provide a temperature reading from the infrared sensor to the user (Fig. 19, Ref. 83); and a filter for positioning between the infrared sensor and the refrigeration component or ambient air (column 2, lines 49-55).

Tabata et al. does not teach that the display is coupled to the infrared sensor by a flexible support.

Lemelson teaches a thermometer with a sensor (Fig.1, Ref. 23) connected to a housing (Fig. 1, Ref. 11) containing a display (Fig. 1, Ref. 12; column 5, lines 12-13) by a flexible support (Fig 1, Ref. 27).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Tabata et al. and Lemelson to connect the display to the sensor with a flexible support. The motivation for doing so would be to be able to see the display if the sensor is placed in a hard to reach area or an area too small to fit both the sensor and the display.

2. Claims 24 and 25 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. in view of Lemelson and further in view of Takaki (US 5,779,365).

Together Tabata et al. and Lemelson teach all of the limitations of claims 24 and 25 except the limitation that the probe comprises a light source to illuminate the refrigeration component (current claim 24) and that the light source is an LED (current claim 25).

Takaki teaches a temperature probe with an LED (column 10, lines 5 and 24).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Tabata et al. and Lemelson with the teachings of Takaki to form a temperature probe with an LED. A light source attached to the probe would illuminate the object to be tested and allow for more precise measurements.

Allowable Subject Matter

3. Claims 22, 23, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See previous office action for reasons for indicating allowable subject matter.

4. Claims 2-10, 12-20, 29-44, and 46-53 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record, whether taken singularly or in combination, teaches the claimed invention.

Claim 37 includes the step of obtaining a plurality of operating parameters from the refrigerant based system including a temperature change across at least one of an accumulator, a metering device, and a condenser.

Claim 48 includes the limitation of a processing means coupled to the input means and the memory for i) processing the plurality of operating parameters based on the plurality of baseline operating parameters, ii) generating a processing result, and iii) providing the processing result and prompts to a user, the processing means including a Weighted Probability Inference Engine (WPIE) to construct failure mode fingerprints of the refrigerant based system.

Claim 49 includes the limitation of a thermal converter for positioning between the infrared sensor and the filter, wherein the thermal converter converts the thermal energy of the ambient air into infrared energy for detection by the infrared sensor.

Claim 50 includes the limitations of (1) constructing a test profile for the refrigerant based system based on the temperature measurements, (2) providing a plurality of failure modes for the refrigerant based system, (3) comparing the test profile with the plurality of failure modes, (4) determining at least one potential failure mode match based on the comparison (5) assigning a probability to each potential failure mode match, and (6) storing each potential failure mode match into memory based on the assigned probability.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed 7/11/03 have been fully considered but they are not persuasive.

While the inclusion of the limitation that the sensor and the display are coupled by means of a "flexible support" in claims 21 and 26 overcomes the original rejection over the prior art, the combination of the original prior art (Tabata et al.) with the Lemelson reference teaches everything claimed in the newly amended claims. Therefore, claims 21 and 26 are finally rejected.

Because claims 21 and 26 remain unpatentable, the argument that claims 24 and 25 are allowable over the prior art because they are dependent on allowable claims is moot. Therefore, claims 24 and 25 are finally rejected.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S Walling whose telephone number is (703) 308-3084. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

msw

John Barlow
Supervisory Patent Examiner
Technology Center 2800